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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

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MEMORANDUM

SUBJECT: Interim Guidance on Compliance with Applicable or Relevant and Appropriate Requirements

FROM: J. Winston Porter
Assistant Administrator

TO: Addressees

Executive Summary

The guidance addresses the requirement in CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, that remedial actions comply with applicable or relevant and appropriate requirements (ARARs) of Federal laws and more stringent, promulgated State laws. The guidance describes how requirements are generally to be identified and applied, and discusses specifically compliance with State requirements and certain surface water and groundwater standards. "Applicable" and "relevant and appropriate" are defined, and the three types of ARARs (chemical-, location-, and action-specific) are described. Guidance is given on how and at what points ARARs are to be used in the remedial process. Eligible State requirements are defined, with particular reference to "promulgated," and direction is given on evaluating siting laws and on using the waiver regarding consistency of application. Finally, the guidance discusses the use of water standards specified in the law (MCLGs, FWQC, ACLs), and describes the use of MCLs as cleanup standards for surface water or groundwater that is or may be used for drinking.

Purpose

This memorandum provides interim guidance on compliance with other Federal and State environmental laws in conducting CERCLA remedial actions. The guidance is intended to help define the nature, scope, and use of applicable or relevant and appropriate requirements. The guidance is not intended to be comprehensive or exhaustive. The Agency is currently developing a guidance manual that provides detailed information on potential ARARs in the major Federal environmental statutes.

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Background

Section 121(d) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), requires that Fund-financed, enforcement, and Federal facility remedial actions comply with requirements or standards under Federal and State environmental laws. The requirements that must be complied with are those that are applicable or relevant and appropriate to the hazardous substances, pollutants, or contaminants at a site or to the circumstances of the release. Compliance is required at the completion of the remedial action for hazardous substances, pollutants, or contaminants that remain on-site. Any such requirements may be waived under six conditions provided that protection of human health and environment is still assured.

SARA essentially codified and expanded upon the Agency's Compliance Policy, which was included in the National Contingency Plan (revised November 20, 1985). The major difference between that policy and the new statutory requirement is that the latter includes more stringent, promulgated State environmental standards as potentially applicable or relevant and appropriate requirements, and Maximum Contaminant Level Goals and Federal Water Quality Criteria as potentially relevant and appropriate requirements.

GENERAL GUIDANCE ON IDENTIFYING AND USING ARARs

This section defines what ARARs are, describes the different types of ARARs, and discusses how they are applied to the remedial process.

Definition of ARARs

A requirement under other environmental laws may be either "applicable" or "relevant and appropriate" to a remedial action, but not both. A two-tier test may be applied: first, to determine whether a given requirement is applicable; then, if it is not applicable, to determine whether it is nevertheless relevant and appropriate.

Applicable requirements means those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site.

"Applicability" implies that the remedial action or the circumstances at the site satisfy all of the jurisdictional prerequisites of a requirement. For example, the minimum technology requirement for landfills under RCRA would apply if a new hazardous waste landfill unit (or an expansion of an existing unit) were to be built on a CERCLA site.

Relevant and appropriate requirements means those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA

site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site.

The relevance and appropriateness of a requirement can be judged by comparing a number of factors, including the characteristics of the remedial action, the hazardous substances in question, or the physical circumstances of the site, with those addressed in the requirement. It is also helpful to look at the objective and origin of the requirement. For example, while RCRA regulations are not applicable to closing undisturbed hazardous waste in place, the RCRA regulation for closure by capping may be deemed relevant and appropriate.

A requirement that is judged to be relevant and appropriate must be complied with to the same degree as if it were applicable. However, there is more discretion in this determination: it is possible for only part of a requirement to be considered relevant and appropriate, the rest being dismissed if judged not to be relevant and appropriate in a given case.

Non-promulgated advisories or guidance documents issued by Federal or State governments do not have the status of potential ARARs. However, as described below, they may be considered in determining the necessary level of cleanup for protection of health or environment.

Types of ARARs

There are several different types of requirements that Superfund actions may have to comply with. The classification of ARARs below is offered for illustrative purposes.

° Ambient or chemical-specific requirements set health or risk-based concentration limits or ranges in various environmental media for specific hazardous substances, pollutants, or contaminants. Examples: Maximum Contaminant Levels, National Ambient Air Quality Standards.

These requirements may set protective cleanup levels for the chemicals of concern in the designated media, or else indicate an acceptable level of discharge (e.g., air emission or wastewater discharge taking into account water quality standards) where one occurs in a remedial activity. If a chemical has more than one such requirement, the more stringent ARAR should be complied with.

There are at present a limited number of actual ambient or chemical-specific requirements. In order to achieve remedies that are protective of health and environment, it may frequently be necessary to use chemical-specific advisory levels such as Carcinogenic Potency Factors or Reference Doses. While not actually ARARs, these chemical-specific advisory levels may factor significantly into the establishment of protective cleanup levels. Guidance for establishing such chemical-specific, health-based cleanup levels is given in the Superfund Public Health Evaluation Manual (EPA 540/1-86/060, Oct. 1986).

* Performance, design, or other action-specific requirements set controls or restrictions on particular kinds of activities related to management of hazardous substances, pollutants, or contaminants. Examples: RCRA regulations for closure of hazardous waste storage or disposal units; RCRA incineration standards; Clean Water Act pretreatment standards for discharges to POTWs.

These requirements are triggered not by the specific chemicals present at a site but rather by the particular remedial activities that are selected to accomplish a remedy. Since there are usually several alternative actions for any remedial site, very different requirements can come into play. These action-specific requirements may specify particular performance levels, actions, or technologies, as well as specific levels (or a methodology for setting specific levels) for discharged or residual chemicals.

* Locational requirements set restrictions on activities depending on the characteristics of a site or its immediate environs. Examples: Federal and State siting laws for hazardous waste facilities; sites on National Register of Historic Places.

These requirements function like action-specific requirements. Alternative remedial actions may be restricted or precluded depending on the location or characteristics of the site and the requirements that apply to it.

Using ARARs

This section explains how and where requirements may be applied in the remedial planning process.

First, actual ARARs can be identified only on a site-specific basis. They depend on the specific chemicals at a site, the particular actions proposed as a remedy, and the site characteristics. Guidance is being developed on the potential ARARs under the major Federal environmental statutes for various activities, locations, and chemicals.

Where there are no specific ARARs for a chemical or situation, or where such ARARs are not sufficient to be protective, one should identify pertinent health advisory levels (such as Reference Doses or Carcinogenic Potency Factors) as described above in order to ensure that a remedy is protective.

The different ARARs that may apply to a site and its remedial action should be identified and considered at multiple points in the remedial planning process, namely:

- During scoping of the RI/FS, chemical-specific and location-specific ARARs may be identified on a preliminary basis.
- During the site characterization phase of the Remedial Investigation, when the public health evaluation is conducted to assess risks at a site, the chemical-specific ARARs and advisories and location-specific ARARs are identified more comprehensively and used to help determine the cleanup goals.

- During development of remedial alternatives in the Feasibility Study, action-specific ARARs are identified for each of the proposed alternatives and considered along with other ARARs and advisories.
- During detailed analysis of alternatives all the ARARs and advisories for each alternative are examined as a package to determine what is needed to comply with other laws and be protective.
- When an alternative is selected it must be able to attain all ARARs unless one of the six statutory waivers is invoked.
- During remedial design the technical specifications of construction must ensure attainment of ARARs.

Note that CERCLA §121(e) exempts any on-site response action from having to obtain a Federal, State, or local permit.

In general, on-site actions need comply only with the substantive aspects of these requirements, not with the administrative aspects. That is, neither applications nor other administrative procedures such as permitting or administrative reviews are considered ARARs for actions conducted entirely on-site, and therefore should not be pursued during the remedial planning or the remedial action. However, the RI/FS, Record of Decision, and design documents should demonstrate full compliance with all substantive requirements that are ARARs. Also, other Federal and State program offices should be consulted as appropriate to ensure that remedies are substantively compliant with identified ARARs.

GUIDANCE ON IDENTIFYING STATE ARARs

This section describes the basic factors to be considered in identifying State requirements for Superfund remedial actions.

As mandated by CERCLA §121(d)(2)(A), remedies must comply with "any promulgated standard, requirement, criteria, or limitation under a State environmental or facility siting law that is more stringent than any Federal standard, requirement, criteria, or limitation" if the former is applicable or relevant and appropriate to the hazardous substance or release in question.

States are required by CERCLA to identify State ARARs "in a timely manner," that is, in sufficient time to avoid inordinate delay or duplication of effort in the remedial process. Regions should expect to work closely with their States so that the appropriate ARARs are identified at critical stages in the process. At a minimum, chemical-specific and location-specific ARARs should be identified after site characterization, and action-specific ARARs should be identified after initial screening of alternatives (prior to detailed analysis) for alternatives that pass through the screening. To the extent possible, Regions and States should negotiate to try to resolve any differences of opinion about ARARs.

Eligible Requirements

The statute specifically limits the scope of potential requirements to those that are promulgated. "Promulgated" requirements are laws imposed by State legislative bodies and regulations developed by State agencies that are of general applicability and are legally enforceable.

State advisories, guidance, or other non-binding policies, as well as standards that are not of general application, cannot be treated as requirements under CERCLA. However, as with their Federal counterparts, State advisories may still be considered in determining an appropriate, protective remedy.

General State goals that are duly promulgated (such as a non-degradation law) have the same weight as explicit, numerical standards, although the former have to be interpreted in terms of a site and therefore may allow more flexibility in approach. Similarly, State laws or regulations that prescribe methods for deriving numerical standards for specific cases may also be potential requirements.

On-site actions need comply only with the substantive aspects of a State requirement, not with the administrative aspects. Where the requirement involves review by a State board based on explicit criteria, the best approach is to incorporate the substantive criteria into the RI/FS and remedy selection process and to maintain close consultation with appropriate State representatives.

Limitations on State Siting Laws

CERCLA §121(d)(2)(C) puts special limitations on the applicability of State requirements or siting laws for hazardous waste facilities that could result in a State-wide prohibition of land disposal. Specifically, in order to be treated as potentially applicable or relevant and appropriate requirements, such laws must:

1) be of general applicability and be formally adopted
2) be based on technical (e.g., hydrogeologic) or other relevant considerations
3) not be intended to preclude land disposal for reasons other than protection of health or environment.

In addition, the State must arrange and pay for additional costs for out-of-State or other disposal necessitated by such a law.

The first criterion is similar to the criterion that a requirement be promulgated, as discussed above. The second criterion requires that such a law be based on sound scientific or technical considerations, such as groundwater flow, surficial geology, and engineering design. The third criterion requires some evidence that health or environmental protection motivates the prescribed restrictions; the introductory sections of a law, the nature of the technical considerations, or the legislative history can be used to make this determination.

Consistency of Application

CERCLA §121(d)(4)(E) allows a State requirement to be waived if it has not been consistently applied by the State in similar circumstances at other remedial actions. The waiver cannot be used if the State has demonstrated the intention to consistently apply the requirement.

Consistency of application by a State may be determined by examining the following:

- Application of requirement at similar sites or in similar response circumstances (considering nature of contaminants or media affected, characteristics of waste and facility, degree of danger or risk, etc.)
- Proportion of cases (including enforcement actions) in which requirement was not applied out of total actions where it could have been applied
- Reason for non-application of requirement in past cases
- Intention to consistently apply requirement in future as shown by policy statements, legislative history, site remedial planning documents, or State responses to Federal-lead sites; newly promulgated requirements shall be presumed to embody this intention unless there is contrary evidence.

All previous actions by States since promulgation that relate to similar remedial actions may be considered in evaluating consistency.

GUIDANCE ON APPLYING SPECIFIED WATER STANDARDS

CERCLA §121(d)(2)(A) and (B) explicitly mention three kinds of surface water or groundwater standards with which compliance is potentially required - Maximum Contaminant Level Goals (MCLGs), Federal Water Quality Criteria (FWQC), and alternate concentration limits (ACLs) where human exposure is to be limited. This section describes these requirements and how they may be applied to Superfund remedial actions. The guidance is based on Federal requirements and policies; more stringent, promulgated State requirements (such as a stricter classification scheme for groundwater) may result in application of even stricter standards than those specified here.

Background

These three standards or criteria each derive from separate statutes and have different purposes and uses.

MCLGs are developed under the Safe Drinking Water Act as chemical-specific health goals used in setting enforceable drinking water standards, known as Maximum Contaminant Levels (MCLs), for public water supply systems. MCLGs are based entirely on health considerations and do not take cost or feasibility into account. Moreover, as health goals MCLGs are set at levels where no known or anticipated health effects may occur, including an adequate margin of safety. MCLs are required to be set as close as feasible to the respective MCLGs, taking into consideration the best technology, treatment techniques, and other factors (including cost). However, as the standard for public water supplies, MCLs are fully protective of human health and (for carcinogens) fall within the acceptable risk range of 10^{-4} to 10^{-7}. Furthermore, for non-carcinogens, which are the majority of contaminants, MCLs will nearly always be set at the same level as the respective MCLGs. Also, these standards assure that even sensitive populations will experience no adverse health effects. Thus, there will be no difference in the protectiveness of MCLGs and MCLs for most contaminants, and, as discussed above, MCLs provide a sufficient level of protectiveness even for carcinogens.

FWQC are developed under the Clean Water Act as guidelines from which States determine their water quality standards. Different FWQC are derived for protection of human health and protection of aquatic life.

ACLs are one of three possible standards available under the Subpart F Groundwater Protection Standards of RCRA. For setting both a trigger and a cleanup level for remediating groundwater contamination, an ACL, the background concentration, or for a small group of chemicals the MCL can be selected for a given site.

Statutory Mandate

CERCLA §121(d)(2) states that remedial actions shall attain applicable or relevant and appropriate requirements under the Safe Drinking Water Act, the Clean Water Act, and RCRA, and specifically shall attain MCLGs and FWQC where they are relevant and appropriate under the circumstances of the release or threatened release. It further states that for FWQC this determination will be based on the designated or potential use of the water, the media affected, the purposes of the criteria, and current information.

CERCLA §121(d)(2)(B)(ii) limits the use of ACLs that are set above health-based levels based on projections that health-based levels will be achieved at a likely point of human exposure. Such a point of exposure may not be beyond the Superfund facility boundary unless the groundwater discharges into surface water and does not cause a statistically significant increase of contaminants in the surface water. To apply such an ACL outside the facility, moreover, the remedial action must include enforceable measures to prevent use of any contaminated groundwater.

Application

In determining the applicable or relevant and appropriate requirements for remedial actions involving contaminated surface water or groundwater, the most important factors to consider are the uses and potential uses of the water and the purposes for which the potential requirements are intended.

The actual or potential use of water, and the manner in which it is used, will determine what kinds of requirements may be applicable or relevant and appropriate. For Class III-type groundwater that is not suitable for drinking because of high salinity or widespread contamination and that does not affect drinkable groundwater, drinking water standards are neither applicable nor relevant and appropriate. For Class I- and Class II-type groundwater or surface water that is or may be used for drinking, drinking water standards are applicable or relevant and appropriate, and the surface water or groundwater must ultimately be cleaned up to such levels.

For water that is or may be used for drinking, the Maximum Contaminant Levels (MCLs) set under the Safe Drinking Water Act are generally the applicable or relevant and appropriate standard. MCLs are applicable at the tap where the water will be provided directly to 25 or more people or will be supplied to 15 or more service connections. Otherwise, where

surface water or groundwater is or may be used for drinking, MCLs are generally relevant and appropriate as cleanup standards for the surface water or the groundwater.

A standard for drinking water for a contaminant for which there is an MCL may be more stringent than the MCL to ensure adequate protection in special circumstances, such as where either multiple contaminants in groundwater or multiple pathways of exposure present extraordinary risks. In setting a level more stringent than the MCL in such cases, a site-specific determination should be made by considering MCLGs, the Agency's policy on the use of appropriate risk ranges for carcinogens, levels of quantification, and other pertinent guidelines. Prior consultation with Headquarters is encouraged in such cases.

When MCLs do not exist for contaminants identified at the site, cleanup levels should be set using chemical-specific advisory levels. Cleanup levels should be selected such that the total risk of all contaminants falls within the acceptable risk range of 10^{-4} to 10^{-7}. In cases where noncarcinogens are present, cleanup levels should be based on acceptable levels of exposure as determined by the Reference Dose, taking into account the effects of other contaminants at the site.

It should be noted that while MCLs are generally the cleanup standards, as described above, the treatment necessary to attain an MCL level for one chemical (or a protective level for a chemical without an MCL) may result in an actual level for another chemical that is below its respective MCL (or protective level).

A more stringent FWQC for aquatic life may be found relevant and appropriate when there are environmental factors that are being considered at a site, such as protection of aquatic organisms. The Agency is still formulating a position with respect to the use of FWQC for protection of human health.

Guidance on the use of ACLs based on limitations on exposure will be forthcoming.

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Further Information

For further information on the subject matter in this interim guidance, contact Steve Smith (FTS-382-2200) or Arthur Weissman (FTS-382-2182) of the Policy and Analysis Staff, Office of Emergency and Remedial Response.

Addressees

Regional Administrators, Regions I-X
Regional Counsel, Regions I-X
Director, Waste Management Division, Regions I, IV, V, VII, and VIII
Director, Emergency and Remedial Response Division, Region II
Director, Hazardous Waste Management Division, Regions III and VI
Director, Toxics and Waste Management Division, Region IX
Director, Hazardous Waste Division, Region X
Environmental Services Division Directors, Region I, VI, and VII

REMOVAL ACTION LEVELS FOR CONTAMINATED DRINKING WATER

Introduction

The purpose of this guidance is to establish "action levels" for prov. alternate water supplies under Superfund removal authority at contaminated drinking water sites. The action level is the primary criterion that must be met for a site to qualify for removal response. The action levels established in this guidance must generally be satisfied before removal authority can be used at either National Priorities List (NPL) sites or non-NPL sites.

Under the 1982 National Contingency Plan (NCP), removal actions were taken in response to "immediate and significant" threats to human health or the environment. The removal program used the 10-Day Health Advisory as the principal benchmark to identify those drinking water contamination incidents that posed the most acute threats to human health. The November 1985 NCP broadened removal authority by authorizing response in situations that present a "threat" to human health or the environment. Therefore, removal actions may now be taken in less urgent situations than under the 1982 NCP.

In response to this expansion of removal authority, the Office of Emergency and Remedial Response (OERR) is revising removal program action levels for contaminated drinking water sites. This guidance expands the previous policy in a number of ways. First, the numeric action levels are now based on levels that are protective for a lifetime exposure rather than a 10-day exposure. Second, both carcinogenic and non-carcinogenic health effects are considered. Third, a reduction factor is used for volatiles to account for exposure due to inhalation. Finally, additional guidance is provided on the use of site-specific factors to trigger removal actions.

The action levels established in this guidance allow a site to qualify for removal response if either: 1) the numeric trigger is exceeded at the tap, or 2) site-specific factors otherwise indicate that a significant health threat exists. The guidance also discusses information sources on health threats from drinking water contamination, factors to consider in determining the extent of action, action levels vs. cleanup standards, prioritizing removal sites, and obtaining exemptions to the statutory limits for alternate water supply sites.

Action Level Based on Numeric Trigger

The numeric trigger is calculated using a model that establishes four different action levels, depending on whether the substance is also a potential human carcinogen and/or volatile. The model is explained below and summarized in Exhibit 1. Based on this model, Exhibit 2 lists the numeric action level for various substances that may be found in drinking water at Superfund sites. A site may qualify for removal response if the numeric trigger for the drinking water contaminant is exceeded at the tap of at least one residence ("residence" includes schools, businesses, etc.). (Note that the decision to initiate a removal action is based on other factors as well, such as the availability of other response mechanisms to initiate action in a timely manner.)